

## ABSTRACT

A polyphase circulating switch includes switch modules interconnected through a multiplicity of rotators preferably arranged in complementary groups of opposite rotation directions. A polyphase circulating switch having a low switching delay is derived from a multi-rotator circulating switch by providing programmable rotators having adjustable relative rotator-cycle phases. A low delay high-capacity switch may also be constructed from prior-art medium-capacity rotator space switches with mutually phase-shifted rotation cycles. A network comprising several constellations of switch modules distributed over a wide geographic area, where the switch modules of each constellation are interconnected through a rotator assembly, is also disclosed. A rotator assembly may comprise an array of rotators and a master controller for data-transfer scheduling and time-coordination.